Insecticidal properties of citrus hystrix DC leaves essential oil against spodoptera litura fabricius.

ABSTRACT

Chemical analyisis by gas chromatography (GC) and gas chromatography-mass spectroscopy (GC-MS) revealed presence of 29 compounds in the essential oil fraction of kaffir lime, Citrus hystrix fresh eaves. Beta-citronellal was the major compound present with 66.85% of total oil followed by beta-citronellol (6.59%), linalool (3.90%) and citronellol (1.76%). Insecticidal properties of C. hystrix leaves essential oil was investigated against tobacco army worm, Spodoptera litura using topical application bioassay on uniform weighted second instar larvae in the laboratory. Essential oil was effectively in killing the larvae and showed that the LD50 is 26.748 µL/g. Insect development and growth index observations showed that the essential oil had antifeedant properties resulting in severe growth inhibition of S. litura.

Keyword: Citrus hystrix; Spodoptera litura; Essential oil; Botanical insecticides.